IN THE CLAIMS:

Please amend the claims as follows.

1.   (Original) A method for encoding information, the method comprising:

identifying a first block of data;

accessing a database to search for the first block of data;

producing a mapped second block of data if said first block of data is stored in said database; and

mapping said first block of data to said mapped second block of data.

2.   (Currently Amended) The method of claim 1, further comprising adding said first block of data ~~and said mapped second block of data~~ to said database if said first block of data is not stored in said database.

3.   (Original) The method of claim 1, further comprising cataloging said mapping step in the database.

4.   (Original) The method of claim 1, further comprising compressing the first block of data.

5.   (Original) The method of claim 4, wherein said compressing comprises using a compression algorithm.

6.   (Currently Amended) The method of claim 1, wherein said mapping comprises mapping said first block of data using a quantum ~~states of~~ representations in said mapped second block of data.

7.   (Original) The method of claim 6, wherein said mapping comprises lossless mapping of said first block of data.

8.   (Original) The method of claim 1, further comprising filtering said mapped second block of data.

9.   (Original) The method of claim 1, further comprising storing said mapped second block of data in said database.

10.   (Original) The method of claim 1, further comprising sending mapped second block of data.

11.   (Currently Amended) The method of claim 1, wherein said mapping comprises entangling all of said first block of data onto said mapped second block of data.

12.   (Currently Amended) The method of claim 1, wherein ~~said mapping comprises said first block of data to said mapped second block of data, in which~~ said

mapped second block of data includes a bit having quantum states, and wherein said quantum states represent said first block of data.

13.   (Original) An information exchange system comprising:

an encoder to map a block of information to an encoded block of data, wherein said encoded block represents said block of information as quantum numbers;

a database accessible by said encoder to store and catalog said block of information and said encoded block, and to provide said encoded block to said encoder if said block of information is stored in the database; and

a transmission medium to support said encoded block.

14.   (Original) The information exchange system of claim 13, further comprising an input to receive said information.

15.   (Original) The information exchange system of 14, wherein said input receives a plurality of streams of said information.

16.   (Original) The information exchange system of claim 13, further comprising an identification node to identify a type of said block of information.

17.   (Original) The information exchanges system of claim 13, further comprising a transmitter.

18.   (Original) The information exchange system of claim 17, wherein said transmitter comprises an antenna.

19.   (Currently Amended) The information exchange system of claim 13, wherein said encoder receives the encoded block from the database, and applies the ~~coded~~ encoded block to the block of information.

20.   (Original) An encoder, comprising:

an identifier to receive a block of information;

a database to store an encoded block of data and to provide the encoded block of information upon receipt of said block of information;

Please add new claims 21-40 as follows:

21.   (New) A method for encoding information, the method comprising:

receiving a block of data;

encoding said block of data by accessing a database and selecting an encoded block of data; and

updating said database with a mapping function for said encoding step.

22.   (New) The method of claim 21, further comprising compressing said block of data, wherein an algorithm for said compressing step is different from said mapping function for said encoding step.

23.   (New) A method for encoding, the method comprising:

accessing a database to select an encoded block of data according to received data; and

representing said received data in a lossless manner by mapping said received data to said encoded block.

24.   (New) An encoder comprising:

receiving means for receiving a block of data;

encoding means for encoding said block of data by accessing a database and selecting an encoded block of data; and

updating means for updating said database with a mapping function for said encoding means.

25.   (New) The encoder of claim 24, wherein said database is coupled to said encoder.

26.   (New) The encoder of claim 24, further comprising compressing means for compressing said block of data, wherein an algorithm for said compressing means is different from said mapping function for said encoding means.

27.   (New) An encoder comprising:

a module for accessing a database to select an encoded block of data according to received data; and

encoding means for representing said received data in a lossless manner by mapping said received data to said encoded block.

28.   (New) The method of claim 1, wherein said first block of data comprises a variable block of data.

29.   (New) The method of claim 1, wherein said mapped second block of data comprises a variable block of data.

30.   (New) The information exchange system of claim 13, wherein said block of information comprises a variable block of information.

31.   (New) The information exchange system of claim 13, wherein said encoded block of data comprises a variable block of data.

32. (New) The encoder of claim 20, wherein said block of information comprises a variable block of information.

33. (New) The encoder of claim 20, wherein said encoded block of data comprises a variable block of data.

34. (New) The method of claim 21, wherein said block of data comprises a variable block of data.

35. (New) The method of claim 21, wherein said encoded block off data comprises a variable block of data.

36. (New) The method of claim 23, wherein said data comprises variable length data.

37. (New) The method of claim 23, wherein said encoded block of data comprises a variable block of data.

38. (New) A computer program embodied on a computer-readable medium for controlling a processor, the computer program executing to perform the steps of:

identifying a first block of data;

accessing a database to search for the first block of data;

producing a mapped second block of data if said first block of data is stored in said database; and

mapping said first block of data to said mapped second block of data.

39.   (New) A computer program embodied on a computer-readable medium for controlling a processor, the computer program executing to perform the steps of:

receiving a block of data;

encoding said block of data by accessing a database and selecting an encoded block of data; and

updating said database with a mapping function for said encoding step.

40.   (New) A computer program embodied on a computer-readable medium for controlling a processor, the computer program executing to perform the steps of:

accessing a database to select an encoded block of data according to received data; and

representing said received data in a lossless manner by mapping said received data to said encoded block.